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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,895	09/29/2003	Spencer Erich Hochstetler	80043-01	1979

40850 7590 08/21/2008  
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KINGSPORT, TN 37662-5075

EXAMINER
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AFREMOVA, VERA

ART UNIT	PAPER NUMBER
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1657

NOTIFICATION DATE	DELIVERY MODE
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08/21/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

EMIDDLE@EASTMAN.COM  
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<b>Office Action Summary</b>	<b>Application No.</b> 10/673,895	<b>Applicant(s)</b> HOCHSTETLER ET AL.	
	<b>Examiner</b> Vera Afremova	<b>Art Unit</b> 1657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4, 11 and 13-40 is/are pending in the application.
- 4a) Of the above claim(s) 18-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 11 and 13-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/19/2008 has been entered.

Claims 1-4, 11 and 13-17 as amended (5/19/2008) are under examination in the instant office action.

This application contains claims 18-40, drawn to invention(s) nonelected with traverse in the reply filed on 4/22/2007.

### ***Claim Rejections - 35 USC § 112***

Claims 1-4, 11 and 13-17 as amended are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is rendered indefinite by the phrase “at least one component” as claimed or as written in the claim 1 because it is unclear whether the claimed dispersion is an aqueous dispersion of at least one whole manufactured product selected from the group of architectural or metal coating, adhesive, cosmetic, ink or polish; or, whether the claimed dispersion is an aqueous dispersion of one component (meaning one or single polymer) that might be used or suitable for making “architectural or metal coating, adhesive, cosmetic, ink or polish”.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-4, 11 and 13 as amended are rejected under 35 U.S.C. 102(a) as being anticipated by Calvo-Bado et al. (Applied and Environmental Microbiology. April 2003, Vol. 69, pages 2116-2125).

Claims are directed to a method for disrupting living cells as intended for ATP release from the living cells wherein the method comprises one active step of agitating an aqueous dispersion comprising at least one polymer in the presence of a particulate disruption agent in order to cause rupture of the cells and to release ATP wherein the polymer is cellulose and the particulate disruption agent is made from glass and has diameter 0.1-1 mm. Some claims are further drawn to the living cells being fungal or bacterial cells including *Bacillus subtilis*, *Pseudomonas*, etc.

Calvo-Bado et al. discloses a method for disrupting living cells as intended for ATP release from the living cells in the sand samples retrieved from the sand filters of horticultural irrigation water. The disclosed method (see entire document including section “materials and methods” on page 2118) comprises active step of agitating a contaminated aqueous dispersion that is “a least one component” or at least one “cellulosic” polymer (plant residues in horticultural irrigation water) in the presence of a particulate disruption agent (0.1 mm diameter glass beads) to cause rupture of the cells contaminating the sample. The living cells in the sand

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sample are *Bacillus subtilis*, *Pseudomonas*, etc. The horticultural irrigation water filtered through the sand filter and present in the analyzed sand sample is reasonably expected to contain at least some amounts of plant residues or cellulosic polymers. For example: see entire document including section "materials and methods" (page 2118).

Thus, the cited reference teaches all structural elements in the method for releasing ATP from living cells as required for the claimed method. Therefore, the cited reference anticipates the claimed invention.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 11 and 13-17 as amended are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 542 790 and Calvo-Bado et al. (Applied and Environmental Microbiology. April 2003, Vol. 69, pages 2116-2125) taken with Salton ("Isolation of cell walls from gram-positive bacteria"; Methods in Enzymology. 1974: 31(Pt A): 653-667), Geciova et al ("Methods for disruption of microbial cells for potential use of the dairy industry". International Dairy Journal. 2002, 12: 541-553) and US 4,421,848 (Whitlock) (IDS reference).

Claims are directed to a method for disrupting living cells as intended for ATP release from the living cells wherein the method comprises step of agitating an aqueous dispersion comprising at least one polymer in the presence of a particulate disruption agent in order to cause

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rupture of the cells and to release ATP wherein the polymer is polyether, acrylic polymer, cellulose, etc. and wherein the particulate disruption agent has diameter 0.1-1 mm and made from glass, plastic, etc. Some claims are further drawn to the living cells being fungal or bacterial cells including *Serratia sp.*, *Bacillus subtilis*, *Pseudomonas*, etc. Some claims are further drawn to agitating on a bead mill with 100-10,000 oscillations per minute for 0.1-5 minutes.

The cited references EP 542 790 and Calvo-Bado et al. teach methods for disrupting living cells as intended for ATP release from the various microbial cells including *Serratia sp.*, *Bacillus subtilis*, *Pseudomonas*, etc.

In particular, the method of Calvo-Bado et al. is relied upon as explained above for the teaching of disrupting living cells and releasing ATP in from these cells contaminating dispersions with cellulosic plant residues.

EP 542 790 also discloses a method for disrupting living cells as intended for ATP release from the living cells contaminating another experimental sample (page 9, examples). In particular, the method comprises one active step of agitating an aqueous dispersion of a polymer with a particulate disruption agent (plastic beads or polystyrene beads) to cause cell wall rupture. The living cells include *Serratia sp.* (page 9, line 17). The polymer is Triton X-100 that has ether functional group and, thus, would qualify as “polyether” and as cleaning component of “cosmetic” dispersion/emulsion within the meaning of the claims directed to analyzing dispersion of at least one component from a selected product. The particulate disruption agent or beads in the method of EP 542 790 have size of 0.984  $\mu\text{m}$  and, thus, smaller than required by the claimed method.

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However, the reference by Salton teaches that the optimal size of beads for disrupting microbial cell wall is 0.1-0.2 mm (page 661, par. 1) and the cited reference by Calvo-Bado et al. also teaches disruption of various cells including *Bacillus subtilis*, *Pseudomonas*, etc as intended for ATP release with glass beads having 0.1 mm diameter (page 2118).

The reference by Geciova et al. at is further relied upon for the suggestion or teaching that bead size and milling time and/or speed (oscillation per minute) during disruption are commonly modified depending on type of living cells present or suspected in the samples (Geciova et al. at page 544, col. 1).

In addition, US 4,421,848 is relied upon for the teaching of cell disrupting agent materials including metal oxide, ballotini or glass beads, carborundum, etc. in the method for releasing ATP from living cells (entire document including col.7, lines 15-16).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to use a particulate disrupting agent having the presently claimed diameter size and made from the presently claimed materials in polymer dispersions with a reasonable expectation of success in releasing ATP as intended for detection of living cells contaminating the polymer dispersions as adequately taught and/or suggested by the cited references combined. Thus, the claimed invention as a whole was clearly *prima facie* obvious, especially in the absence of evidence to the contrary. One of skill in the art would have been motivated to modify agitation speed and bead size with regard to the type of living cells as adequately taught and/or suggested by Geciova et al.

The claimed subject matter fails to patentably distinguish over the state art as represented by the cited references. Therefore, the claims are properly rejected under 35 USC § 103.

***Response to Arguments***

Applicants' arguments filed 5/19/2008 have been fully considered but they are not all found persuasive. Some Applicants' arguments with respect to the pending claims as amended have been considered but are moot in view of the new ground(s) of rejection.

Claim rejections under 35 U.S.C. 102(b) as being anticipated by DE 196 25 137 or by EP 542 790 have been withdrawn because the methods of the cited references do not encompass the use of "a particulate disrupting agent" that has diameter of about 0.1 mm to about 1 mm as presently claimed.

With regard to the claim rejection under 35 USC § 103 Applicants' main argument is that there is no suggestion to combine the references. However, the cited references EP 542 790 and Calvo-Bado et al. are in the same field of endeavor (such as disruption of cells in aqueous dispersions with polymers and/or particulate materials) and they seek to solve the same problems as the instant application and claims (such as disruption of cells for ATP release as intended for evaluation of contamination in dispersions with polymers), and one of skill in the art is free to select components available in the prior art, *In re Winslow*, 151 USPQ 48 (CCPA, 1966).

With regard to the reference by Geciova et al., in particular, Applicants argue that this reference would teach and/or suggest one of skill in the art that all cell disruption protocols including chemical lysis, sonication and mechanical treatment are equal while the instant application demonstrates the superior and unexpected effects with glass bead milling as applied to contaminated latex emulsions.

However, the scope of the showing must be commensurate with the scope of claims to consider evidence probative of unexpected results, for example. *In re Dill*, 202 USPQ 805



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(CCPA, 1979), *In re Lindner* 173 USPQ 356 (CCPA 1972), *In re Hyson*, 172 USPQ 399 (CCPA 1972), *In re Boesch*, 205 USPQ 215, (CCPA 1980), *In re Grasselli*, 218 USPQ 769 (Fed. Cir. 1983), *In re Clemens*, 206 USPQ 289 (CCPA 1980). It should be clear that the probative value of the data is not commensurate in scope with the degree of protection sought by the claim.

In the instant case, the claimed compositions of polymer dispersions are uncertain as claimed and, further, their compositions include other prior art materials besides sulfonated polyester dispersions for which the unexpected effects have been shown (examples 11-17 and table 2 on page 24). The claimed disrupting materials also include other materials besides glass beads that are argued and disclosed (examples 1-17). The evidence necessary to overcome a *prima facie* case of obviousness must not only be clear and convincing, but must also be commensurate in scope with the claimed subject matter. The allegation that limited data is sufficient to establish the existence of unexpected effects from other similar treatments would be without merit. It is well recognized that unexpected results are unpredictable and very dependant on the specific materials used in each case.

Thus, any combination of the prior art elements for which superior effects are not clearly shown would be properly rejected because non-obviousness would not have been established. Therefore, the claims are properly rejected under 35 USC § 103.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vera Afremova whose telephone number is (571) 272-0914. The examiner can normally be reached from Monday to Friday from 9.30 am to 6.00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon P. Weber, can be reached at (571) 272-0925.

The fax phone number for the TC 1600 where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology center 1600, telephone number is (571) 272-1600.

Vera Afremova

AU 1657

August 14, 2008

VERA AFREMOVA

PRIMARY EXAMINER

/Vera Afremova/

Primary Examiner, Art Unit 1657